Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently Amended) A method in a data processing system for generating coverage data during execution of code in the data processing system, the method comprising:

responsive to executing an instruction in the code by a processor in the data processing system, determining whether an access indicator is associated with the instruction, wherein the access indicator associated with the instruction is located in a shadow memory; and

if the access indicator is associated with the instruction, changing, by the processor, a state of the access indicator when the instruction is executed, wherein coverage data is generated during execution of the code by the processor.

2. (Original) The method of claim 1, wherein the changing step comprises:

receiving a signal at an instruction cache in the processor from a processor unit in the processor; and

responsive to receiving the signal, changing the state of the access indicator by the instruction cache.

3. (Previously Presented) The method of claim 2, wherein the instruction is dispatched to one of a plurality of different execution units for execution and the signal is received from a completion buffer when the execution of the instruction has occurred.

4. (Original) The method of claim 1 further comprising:

marking selected instructions in the code for generating the coverage data by associating access indicators with selected instructions in the code.

5. (Previously Presented) The method of claim 2, wherein instructions in the instruction cache are located in different positions within the instruction cache and wherein the signal includes an identification of a position in the instruction cache for the instruction.

6-7. (Cancelled)

8. (Currently Amended) ~~The method of claim 1~~ A method in a data processing system for generating coverage data during execution of code in the data processing system, the method comprising:

responsive to executing an instruction in the code by a processor in the data processing system, determining whether an access indicator is associated with the instruction, wherein the access indicator associated with the instruction is located in a page table; and

if the access indicator is associated with the instruction, changing, by the processor, a state of the access indicator when the instruction is executed, wherein coverage data is generated during execution of the code by the processor.

9. (Original) The method of claim 1, wherein the access indicator is an instruction access indicator.

10. (Cancelled)

11. (Original) The method of claim 1, wherein access indicators are associated with every instruction within the code.

12. (Currently Amended) ~~The method of claim 1~~ A method in a data processing system for generating coverage data during execution of code in the data processing system, the method comprising:

responsive to executing an instruction in the code by a processor in the data processing system, determining whether an access indicator is associated with the instruction, wherein access indicators are associated only with subroutines within the code; and

if the access indicator is associated with the instruction, changing, by the processor, a state of the access indicator when the instruction is executed, wherein coverage data is generated during execution of the code by the processor.

13-16. (Cancelled)

17. (Currently Amended) A data processing system for generating coverage data during execution of code in the data processing system, the data processing system comprising:

determining means, responsive to executing an instruction in the code by a processor in the data processing system, for determining whether an access indicator is associated with the instruction; and

changing means, if the access indicator is associated with the instruction, for changing, by the processor, a state of the access indicator when the instruction is executed, wherein coverage data is generated during execution of the code by the processor, wherein executed instructions in the code have

set access indicators set when the state of the access indicators associated with the executed instructions are changed, while unexecuted instructions have unset access indicators because the state of the unset access indicators remain unchanged.

18. (Original) The data processing system of claim 17, wherein the changing means comprises:

receiving means for receiving a signal at an instruction cache in the processor from a processor unit in the processor; and

means, responsive to receiving the signal, for changing the state of the access indicator by the instruction cache.

19. (Previously Presented) The data processing system of claim 18, wherein the instruction is dispatched to one of a plurality of different execution units for execution and the signal is received from a completion buffer when the execution of the instruction has occurred.

20. (Original) The data processing system of claim 17 further comprising:

marking means for marking selected instructions in the code for generating the coverage data by associating access indicators with selected instructions in the code.

21. (Previously Presented) The data processing system of claim 18, wherein instructions in the instruction cache are located in different positions within the instruction cache and wherein the signal includes an identification of a position in the instruction cache for the instruction.

22. (Original) The data processing system of claim 17, wherein the access indicator is located in a field in the instruction.

23. (Cancelled)

24. (Currently Amended) The data processing system of claim 17, wherein ~~wherein~~ the access indicator associated with the instruction is located in at least one of a shadow memory and a page table.

25. (Currently Amended) ~~The data processing system of claim 17~~ A data processing system for generating coverage data during execution of code in the data processing system, the data processing system comprising:

determining means, responsive to executing an instruction in the code by a processor in the data processing system, for determining whether an access indicator is associated with the instruction; and

changing means, if the access indicator is associated with the instruction, for changing, by the processor, a state of the access indicator when the instruction is executed, wherein coverage data is generated during execution of the code by the processor, wherein access indicators are associated only with subroutines within the code.

26-28. (Cancelled)